UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/753,286	12/29/2000	William C.Y. Lee	G&C 30180.143-US-U1	9857

22462 7590 05/20/2004

GATES & COOPER LLP
HOWARD HUGHES CENTER
6701 CENTER DRIVE WEST, SUITE 1050
LOS ANGELES, CA 90045

EXAMINER	
THANGAVELU, KANDASAMY	
ART UNIT	**PAPER NUMBER**
2123	6

DATE MAILED: 05/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PPG

Office Action Summary	Application No.	Applicant(s)	
	09/753,286	LEE ET AL.	
	Examiner	Art Unit	
	Kandasamy Thangavelu	2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 December 2000*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-45* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7,16-22 and 31-37* is/are rejected.

7)☒ Claim(s) *8-15,23-30 and 38-45* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *April 25, 2002*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-45 of the application have been examined.

Drawings

2. The drawings submitted on December 29, 2000 are objected because of the following informalities:

In Fig. 1, both the modeling tool and the network are numbered 104. Separate component number is recommended for the network.

In Figures 11A and 11B, it is not clear what happens after blocks 1114, 1116, 1108, 1110, 1120, 1126, 1130, 1134 and 1138. It is recommended that the end of the algorithm be indicated by a separate block and all the above blocks connected to the end block. A separate start block may also precede the block 1100.

Appropriate corrections are required.

Specification

3. The disclosure is objected to because of the following informalities:

Page 2, Line 24, "However, water may many different impacts at varying levels" appears to be incorrect and it appears that it should be "However, water may have many different impacts at varying levels".

Page 5, Lines 2-3, "The client computer 102 connects via a network 106 to a server computer 106" appears to be incorrect and it appears that it should be "The client computer 102 connects via a network 104 to a server computer 106".

Page 5, Lines 5-6, "servers 106 that are personal computers ... and networks 106" appears to be incorrect and it appears that it should be "servers 106 that are personal computers ... and networks 104".

Page 7, Lines 5-6, "Radial land elevation = All points between the base station and the mobile transceiver" appears to be incorrect and it appears that it should be "Radial land elevation = Height in feet between the base station and the mobile transceiver".

Page 7, Lines 7-8, "Radial attribute elevation = All points between the base station and the mobile transceiver" appears to be incorrect and it appears that it should be "Radial land elevation = Height in feet between the base station and the mobile transceiver".

Page 9, Lines 20-21, "and the land and water are blocked from the mobile transceiver 200" appears to be incorrect and it appears that it should be "and the paths of RF signals reflected by the land and water are blocked from the mobile transceiver 200".

Page 10, Lines 2-3, "the land is blocked from the mobile transceiver 200, and the water is not blocked from the mobile transceiver 200" appears to be incorrect and it appears that it should be "the paths of RF signals reflected by the land are blocked from

the mobile transceiver 200, and the paths of RF signals reflected by the water are not blocked from the mobile transceiver 200".

Page 10, Lines 12-14, "the land is not blocked from the mobile transceiver 200, and the water is blocked from the mobile transceiver 200" appears to be incorrect and it appears that it should be "the paths of RF signals reflected by the land are not blocked from the mobile transceiver 200, and the paths of RF signals reflected by the water are blocked from the mobile transceiver 200".

Appropriate corrections are required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

5. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 1, 2, 4-7, 16, 17, 19-22, 31, 32 and 34-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Johnson et al.** (U.S. Patent 6,625,135) in view of **Carter et al.** (IEEE, 1990: "Recovery effects in cellular radio systems").

6.1 **Johnson et al.** teaches method and apparatus for incorporating environmental information for mobile communications. Specifically, as per claim 31, **Johnson et al.** teaches a computer-implemented system for modeling a wireless communications system, wherein the wireless communications system includes at least one transmitter and at least one receiver located at a distance from the transmitter (Abstract; Fig. 5; Fig. 6; Fig. 8; Fig. 12; CL1, L11-17; CL3, L33-44; CL12, L24, CL13, L45); comprising:

(a) a computer (Fig. 5; Fig. 7; CL15, L3-47);

(b) means, performed by the computer, for modeling a radio frequency (RF) signal's propagation between the transmitter and the receiver (Fig. 6, Item 34; CL2, L1-7; CL3, L33-44; CL12, L24 to CL13, L45)

Johnson et al. does not expressly teach means, performed by the computer, for determining an effect from at least one body of water residing between the transmitter and the receiver on the modeled radio frequency (RF) signal's propagation. **Carter et al.** teaches means, performed by the computer, for determining an effect from at least one body of water residing between the transmitter and the receiver on the modeled radio frequency (RF) signal's propagation (Page 593, CL1, Abstract; Page 593, CL2, Para 2), because there is increase in

received signal strength when there is a sea (body of water) in the signal path (Page 593, CL2, Para 2). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to combine the system of **Johnson et al.** with the system of **Carter et al.** that included means, performed by the computer, for determining an effect from at least one body of water residing between the transmitter and the receiver on the modeled radio frequency (RF) signal's propagation. One would be motivated because there would be increase in received signal strength when there was a sea (body of water) in the signal path.

Johnson et al. does not expressly teach means, performed by the computer, for outputting a signal strength value for the modeled RF signal based on the determined effect from the body of water residing between the transmitter and receiver. **Carter et al.** teaches means, performed by the computer, for outputting a signal strength value for the modeled RF signal based on the determined effect from the body of water residing between the transmitter and receiver (Page 593, CL1, Abstract; Page 593, CL2, Para 2), because there is increase in received signal strength when there is a sea (body of water) in the signal path (Page 593, CL2, Para 2). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to combine the system of **Johnson et al.** with the system of **Carter et al.** that included means, performed by the computer, for outputting a signal strength value for the modeled RF signal based on the determined effect from the body of water residing between the transmitter and receiver. One would be motivated because there would be increase in received signal strength when there was a sea (body of water) in the signal path.

6.2 As per claim 32, **Johnson et al.** and **Carter et al.** teach the system of Claim 31. **Johnson et al.** teaches the means for determining comprises means for using line-of-sight calculations to determine the RF signal's strength (CL12, L24 to CL13, L45).

Johnson et al. does not expressly teach that the means for determining comprises means for using line-of-sight calculations to determine the effect from the body of water on the RF signals's strength. **Carter et al.** teaches that the means for determining comprises means for using line-of-sight calculations to determine the effect from the body of water on the RF signal's strength (Page 593, CL1, Abstract; Page 593, CL2, Para 2), because there is increase in received signal strength when there is a sea (body of water) in the signal path (Page 593, CL2, Para 2). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to combine the system of **Johnson et al.** with the system of **Carter et al.** that included the means for determining comprising means for using line-of-sight calculations to determine the effect from the body of water on the RF signal's strength. One would be motivated because there would be increase in received signal strength when there was a sea (body of water) in the signal path.

6.3 As per claim 34, **Johnson et al.** teaches the means for determining comprises means for predicting the RF signal's propagation in a first case where the receiver is visible to the transmitter. (CL13, L17-39).

6.4 As per claim 35, **Johnson et al.** does not expressly teach that the means for predicting is affected if the body of water is detected along a straight-line path from the transmitter to the receiver. **Carter et al.** teaches that the means for predicting is affected if the body of water is detected along a straight-line path from the transmitter to the receiver (Page 594, CL1, Para 3 and Para 4; Fig. 1), because there is increase in received signal strength when there is a sea (body of water) in the signal path (Page 593, CL2, Para 2). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to combine the system of **Johnson et al.** with the system of **Carter et al.** that included the means for predicting being affected if the body of water was detected along a straight-line path from the transmitter to the receiver. One would be motivated because there would be increase in received signal strength when there was a sea (body of water) in the signal path.

6.5 As per claim 36, **Johnson et al.** teaches the means for determining comprises means for predicting the RF signal's propagation in a second case where the receiver is not visible to the transmitter (CL13, L17-39).

6.6 As per claim 37, **Johnson et al.** does not expressly teach that the means for predicting is affected if the body of water is detected along a straight-line path from the transmitter to the receiver. **Carter et al.** teaches that the means for predicting is affected if the body of water is detected along a straight-line path from the transmitter to the receiver (Page 594, CL1, Para 3 and Para 4; Fig. 1), because there is increase in received signal strength when there is a sea (body of water) in the signal path (Page 593, CL2, Para 2). It would have been obvious to one of

ordinary skill in the art at the time of Applicants' invention to combine the system of **Johnson et al.** with the system of **Carter et al.** that included the means for predicting being affected if the body of water was detected along a straight-line path from the transmitter to the receiver. One would be motivated because there would be increase in received signal strength when there was a sea (body of water) in the signal path.

6.7 As per Claims 1, 2, 4-7, 16, 17 and 19-22, these are rejected based on the same reasoning as Claims 31, 32 and 34-37, supra. Claims 1, 2, 4-7, 16, 17 and 19-22 are method and article of manufacture claims reciting the same limitations as Claims 31, 32 and 34-37, as taught throughout by **Johnson et al.** and **Carter et al.**

7. Claims 3, 18 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Johnson et al.** (U.S. Patent 6,625,135) in view of **Carter et al.** (IEEE, 1990: "Recovery effects in cellular radio systems"), and further in view of **Ong et al.** (IEEE, 1997: "Propagation measurements on an over-water, line-of-sight link in Singapore").

7.1 As per claim 33, **Johnson et al.** and **Carter et al.** teach the system of claim 31. **Johnson et al.** teaches that he RF signal is represented as a theoretical ray in the computer, and a reflection point of the ray is located where the ray intersects land (CL12, L60 to CL13, L39).

Johnson et al. does not expressly teach that the RF signal is represented as a theoretical ray in the computer, and a reflection point of the ray is located where the ray intersects water.

Ong et al. teaches that the RF signal is represented as a theoretical ray in the computer, and a reflection point of the ray is located where the ray intersects water (Page 1714, CL2, Para 2), because the reflection from the sea is part of the multipath propagation mechanisms (Page 1714, CL2, Para2). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to combine the system of **Johnson et al.** with the system of **Ong et al.** that included the RF signal being represented as a theoretical ray in the computer, and a reflection point of the ray being located where the ray intersected water. One would be motivated because the reflection from the sea would be part of the multipath propagation mechanisms.

7.2 As per Claims 3 and 18, these are rejected based on the same reasoning as Claim 33, supra. Claims 3 and 18 are method and article of manufacture claims reciting the same limitations as Claim 33, as taught throughout by **Johnson et al., Carter et al.** and **Ong et al.**

Allowable Subject Matter

8. Claims 8-15, 23-30 and 38-45 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Kandasamy Thangavelu whose telephone number is 703-305-0043. The examiner can normally be reached on Monday through Friday from 8:00 AM to 5:30 PM.

If attempts to reach examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Teska, can be reached on (703) 305-9704. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-9600.

K. Thangavelu
Art Unit 2123
May 15, 2004

SAMUEL BRODA, ESQ.
PRIMARY EXAMINER